

We claim:

1. An articulation member usable in surgery, said articulation member comprising:
 - a generally elongate first arm, said first arm defining a first arm longitudinal axis, said first arm having a first arm first end and an opposed first arm second end;
 - a generally elongate second arm, said second arm defining a second arm longitudinal axis, said second arm having a second arm first end and an opposed second arm second end, said first and second arm being positioned relative to each other so as to define an orientation angle between said first and second arm longitudinal axes;
 - a substantially spherical ball, said ball extending from said first arm first end;
 - a housing, said housing defining a pair of generally opposed socket seat portions, said socket seat portions being configured and sized so as to together substantially fittingly receive said ball for securing and allowing rotation thereof, said housing also defining a pair of generally opposed clamp surfaces, said clamp surfaces being configured and sized so as to together receive and secure an insertable portion of said second arm; and
 - a locking member operatively coupled to said housing, said locking member being moveable between a loosened configuration and a tightened configuration wherein respectively,
 - in said loosened configuration said locking member allows relative movement between said ball and said socket seat portions so as to permit relative pivotal movement between said first arm and said second arm within a predetermined range of orientation angles; and
 - in said tightened configuration, said locking member locks the orientation of said second arm relative to said first arm in a desired orientation angle, said orientation angle being within said predetermined range.

2. The articulation member of claim 1, wherein in said loosened configuration, said predetermined range of orientation angles ranges from substantially 0 to substantially 180 degrees.
3. The articulation member of claim 1, wherein in said loosened configuration, said locking member allows relative movement between said ball and said socket seat portions so as to permit rotation of said second arm about a first rotation axis, said first rotation axis being substantially parallel to said first arm longitudinal axis.
4. The articulation member of claim 2, wherein in said loosened configuration, said locking member allows relative movement between said ball and said socket seat portions so as to permit rotation of said second arm about a first rotation axis, said first rotation axis being substantially parallel to said first arm longitudinal axis, said rotation defines a second arm angular displacement, said second arm angular displacement having a range from substantially 0 to substantially 360 degrees.
5. The articulation member of claim 3, wherein said second arm insertable portion is substantially cylindrical, and wherein in said loosened configuration, said locking member allows relative movement between said second arm insertable portion and said clamp surfaces so as to permit rotation of said second arm about a second rotation axis, said second rotation axis being substantially parallel to said second arm longitudinal axis, and wherein in said tightened configuration, said locking member secures the position of said second arm relative to said housing.
6. The articulation member of claim 3, wherein in said loosened configuration, said locking member allows relative movement between said second arm insertable portion and said clamp surfaces so as to permit translation of said second arm through said housing along a translation axis, said translation axis being substantially parallel to said

second arm longitudinal axis, and wherein in said tightened configuration, said locking member prevents translation of said second arm relative to said housing.

7. The articulation member of claim 3, further including an arm attachment means extending from said first arm second end, said attachment means configured and sized for attaching said first arm second end to a substantially stable surgical platform.
8. The articulation member of claim 4, wherein said second arm insertable portion is substantially cylindrical, and wherein in said loosened configuration, said locking member allows relative movement between said second arm insertable portion and said clamp surfaces so as to permit rotation and translation of said second arm relative to said housing, said rotation occurring about a second rotation axis, said translation occurring along a translation axis, said second rotation and translation axes each being substantially parallel to said second arm longitudinal axis, and wherein in said tightened configuration, said locking member prevents translation and rotation of said second arm relative to said housing.
9. The articulation member of claim 5, wherein in said loosened configuration, said locking member allows relative movement between said second arm insertable portion and said clamp surfaces so as to permit translation of said second arm through said housing along a translation axis, said translation axis being substantially parallel to said second arm longitudinal axis, and wherein in said tightened configuration, said locking member prevents translation of said second arm relative to said housing.
10. An articulation member usable in a surgical apparatus to provide articulation between a surgical arm and a surgical tool, said surgical arm being generally elongate and defining an arm longitudinal axis, said arm longitudinal axis extending between an arm first end and an arm second end, said surgical arm having a substantially spherical ball extending

from said arm first end, said surgical tool having a generally elongated attachment portion, said surgical tool defining a tool longitudinal axis extending between a tool first end and a tool second end, said articulation member comprising:

- a housing, said housing having a pair of generally opposed clamping members, said clamping members each having a socket seat portion for receiving a portion of said ball, said clamping members also each having a clamp surface for receiving an insertable tool portion of said attachment portion, said clamping members being spaced apart by a spacing distance;
- a locking member operatively connected to said housing, said locking member being moveable between a loosened configuration and a tightened configuration wherein respectively;
 - in said loosened configuration the orientation of said ball relative to said socket seat portions is modifiable so as to permit relative pivotal movement between said surgical arm and said surgical tool; and
 - in said tightened configuration, said locking member simultaneously urges said socket seat portions toward said ball, and said clamp surfaces toward said insertable tool portion, thereby frictionally locking the orientation of said surgical tool relative to said surgical arm.

11. The articulation member of claim 10, wherein in said loosened configuration, said locking member allows relative movement between said ball and said socket seat portions so as to permit rotation of said surgical tool about a first rotation axis, said first rotation axis being substantially parallel to said arm longitudinal axis.
12. The articulation member of claim 11, wherein said spacing distance is created by said ball and said insertable tool portion when said surgical arm and surgical tool are fittingly engaged between said clamping members.

13. The articulation member of claim 11, wherein in said loosened configuration, said locking member allows relative movement between said insertable tool portion and said clamp surfaces so as to permit translation of said surgical tool through said housing along a translation axis, said translation axis being substantially parallel to said tool longitudinal axis, and wherein in said tightened configuration said locking member prevents translation of said surgical tool relative to said housing.
14. The articulation member of claim 11 further comprising a spring member, and wherein in said loosened configuration, said spring member maintains each of said socket seat portions in contact with said ball during said relative pivotal movement between said surgical arm and said surgical tool.
15. The articulation member of claim 11, wherein each of said clamp members is generally elongate defining a clamp longitudinal axis, each of said clamp members having a clamp first end and an opposed clamp second end, and wherein said clamp surface is located substantially proximal to said clamp first end, and wherein said socket seat portion is located substantially proximal to said clamp second end, said clamp surface and socket seat portion defining a clamp surface-to-socket seat portion spacing therebetween.
16. The articulation member of claim 11, wherein said surgical tool is a heart stabilizer for stabilizing a moving heart tissue.
17. The articulation member of claim 13, wherein said insertable tool portion is substantially cylindrical, and wherein in said loosened configuration, said locking member allows relative movement between said insertable tool portion and said clamp surfaces so as to permit rotation of said surgical tool about a second rotation axis, said second rotation axis being substantially parallel to said tool longitudinal axis, and wherein in said

tightened configuration, said locking member secures position of said surgical tool relative to said housing.

18. The articulation member of claim 14, wherein in said loosened configuration, said spacing distance is modifiable so as to allow insertion of said insertable tool portion within said clamp surfaces, said insertion occurring in an insertion direction generally perpendicular to said tool longitudinal axis, said spacing distance being modifiable by pivotal movement of said socket seat portions relative to said ball in opposed directions thereby increasing the size of said spacing distance, said pivotal movement occurring with said contact between said ball and said socket seat portions.
19. The articulation member of claim 15, wherein at least one of said clamp surfaces is substantially elongated, said at least one of said elongated clamp surfaces being in a substantially orthogonal relationship relative to said clamp longitudinal axis.
20. The articulation member of claim 15, wherein said locking member imparts a locking action on each of said clamping members, said locking action being imparted substantially intermediate between said clamp surfaces and said socket seat portion.
21. The articulation member of claim 20, wherein said locking member is selected from the group comprising a screw member, a toggle device, and a cam-type lock.
22. An articulation member usable with a surgical tool, said tool having a longitudinal member, said longitudinal member having a tool longitudinal axis extending between a tool first end and a tool second end, said tool having a functional portion extending from said tool first end, said functional portion being usable for performing a surgical intervention on a body tissue, said articulation member comprising:

- a generally elongate surgical arm, said surgical arm defining an arm longitudinal axis, said surgical arm having an arm first end and an opposed arm second end;
- a ball and socket connector, said ball and socket connector being coupled to said arm first end, said ball and socket connector being configured and sized to fittingly receive and secure an insertable portion of said longitudinal member therein, said longitudinal member being insertable in an insertion direction substantially perpendicular to said tool longitudinal axis;
- a locking member, said locking member being operatively connected to said ball and socket connector, said locking member moveable between a loosened configuration and a tightened configuration wherein respectively;
 - in said loosened configuration, said locking member permits said tool to be inserted and withdrawn respectively into and from said ball and socket connector along said insertion direction; and
 - in said tightened condition, said locking member locks the position of said tool relative to said arm.

23. The articulation member of claim 22, wherein said locking member is substantially proximal to said ball and socket connector.

24. The articulation member of claim 23, further comprising means to attach said articulation member to a substantially stable surgical platform, said means acting on said arm second end.

25. The articulation member of claim 23, wherein said surgical tool is a device for stabilizing a moving body tissue, and said functional end being a tissue contacting means.